Tanzania - Mainland Trunk and Zanzibar Rural Roads

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Overview

Identification

COUNTRY
Tanzania

EVALUATION TITLE
Mainland Trunk and Zanzibar Rural Roads

EVALUATION TYPE
Independent Impact Evaluation

ID NUMBER
DDI-MCC-TZA-MPR-ROADS-2009-v01.1

Version

VERSION DESCRIPTION
Anonymized dataset for public distribution

Overview

ABSTRACT
To evaluate the impact of the rehabilitation of the project roads on the socioeconomic development of the communities along the roads, the study will use a combination of propensity score matching and difference-in-differences regression. Communities along the roads scheduled for upgrades (the treatment communities) will be matched with other communities that have similar characteristics but will not benefit from the road upgrades (the comparison communities). This will result in two comparable groups of communities: one group that is situated along the roads and will receive the (benefits of) road upgrades and another group that will not. The study will obtain pre-treatment and post-treatment data on both groups of communities and compare values of key outcome variables, such as travel time, travel cost, and income.

EVALUATION METHODOLOGY
Propensity Score Matching, Difference-in-Difference

UNITS OF ANALYSIS
Household, Community

KIND OF DATA
Sample survey data [ssd]

TOPICS

Topic	Vocabulary	URI
Transport	MCC Sector	

KEYWORDS
Vehicle Operating Costs, Traffic Volume

Coverage

GEOGRAPHIC COVERAGE
The program includes road segments in four regions of Tanzania: Tanga, Rukwa, Mbeya, and Ruvuma. Three sets of road segments will be upgraded: (1) Tanga-Horohoro (in Tanga region, connects with Kenya border), (2) Tunduma-Sumbawanga (in Rukwa and Mbeya regions, connects with Zambia border), and (3) Namtumbo - Songea and Peramiho - Mbinga (in Ruvuma region, connect with Mtwara Corridor roads leading to the Eastern coast).

UNIVERSE
Households located in communities along the upgraded roads

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Economic Development Initiatives	EDI

FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Millennium Challenge Corporation	MCC		Review of Metadata
Economic Development Initiatives	EDI	Independent Evaluator & Survey Firm	Metadata Producer

DATE OF METADATA PRODUCTION
2013-02

DDI DOCUMENT VERSION
Version 1.1 (March 2014). This version uses the new MCC metadata template.

DDI DOCUMENT ID
DDI-MCC-TZA-MPR-ROADS-2009-v01.1

MCC Compact and Program

COMPACT OR THRESHOLD
Tanzania Compact

PROGRAM
The study evaluates the Tanzania Transport Project, Mainland Trunk Roads Activity. The Government of the united States of America acting through the Milennium Challenge Corporation (MCC and the Government of Tanzania entered in to a Millennium Challenge Compact for the reduction of poverty through the implementation of three projects: (i) The Transport Sector Project; (ii) The Energy Sector Project; and (iii) The Water Sector Project. The Transport infrastructure project in Tanzania aims to reduce travel times and to facilitate access to social services by rehabilitating trunk roads on the mainland and the airport of Mafia Island. The project will provide technical assistance to enhance the Government of Tanzania's maintenance capacities. Roads are vital for Tanzania's commerce and trade with neighboring countries such as Kenya, Mozambique, and Malawi. The broad objective of the Road Traffic Count Survey (RTCS) is to establish the current values of indicators related to road use, costs and travel time on the roads funded by the MCC; i.e. easy access to markets, schools, and health facilities; reduction of travel time and cost, and vehicle maintenance cost.

MCC SECTOR
Transport (Trans)

PROGRAM LOGIC
The Mainland Trunk RoadsActivity, budgeted at approximately $350M, was designed to upgrade 435 kilometers of trunk roads to bitumen pavement standards. Three sets of road segments will be upgraded: (1) Tanga-Horohoro (in Tanga region, connects with Kenya border), (2) Tunduma-Sumbawanga (in Rukwa and Mbeya regions, connects with Zambia border), and (3) Namtumbo - Songea and Peramiho - Mbinga (in Ruvuma region, connect with Mtwara Corridor roads leading to the Eastern coast). This Activity is expected to result in the following outcomes: Increased savings from a reduction in vehicle operating costs, Increased traffic volumes, and Improved road safety. Based on these outcomes, the Activity is expected to achieve the following Objectives: Increased time savings for road travelers, Increased investment and economic activities,

and Improved human capital accumulation. With the achievement of these objectives, the Activity is expected to meet the ultimate goal of poverty reduction through economic growth.

PROGRAM PARTICIPANTS

The program includes road segements in four regions of Tanzania: Tanga, Rukwa, Mbeya, and Ruvuma. Three sets of road segments will be upgraded: (1) Tanga-Horohoro (in Tanga region, connects with Kenya border), (2) Tunduma-Sumbawanga (in Rukwa and Mbeya regions, connects with Zambia border), and (3) Namtumbo - Songea and Peramiho - Mbinga (in Ruvuma region, connect with Mtwara Corridor roads leading to the Eastern coast). The questionnaire was administered to 15 households per village, resulting in a total of 1200 interviewed households.The questionnaire was administered to 15 households per village, resulting in a total of 1200 interviewed households.Overall, we interviewed 7,335 persons in North Pemba: 3,804 in Wete district and 3531 in Micheweni. The surveyed households included slightly more men (3,710) than women (3,625). In the two youngest age categories (the under-fives and those between 5 and 14 years old) there are more males than females. In the oldest age categories, there are more women than men. The average household in Pemba North includes just over six members. Household size is a little higher in Micheweni (6.19) than in Wete (6.04).

Sampling

Study Population

Households located in communities along the upgraded roads

Sampling Procedure

The survey has been administered in 200 communities in the four Regions. In Tanzania, vitongoji - subunits of villagesare good approximations of the concept of a community. Hence, 200 vitongji needed to be selected into the sample. We distributed these 200 vitongoji along the three road projects proportional to the square root of the length of each road project. This design assures representativeness along the shorter roads as these roads are assigned proportionally more vitongoji than the longer roads.

To construct the actual sample, we drew up an exhaustive list of villages along the treatment and comparison roads. Next, we randomly sampled the required number of villages per road project (24 for Tanga - Horohoro, 34 for Namtumbo - Songea - Mbinga, 42 for Sumbawanga - Tunduma), resulting in a sample of 100 villages. Since MCA?Tanzania expressed interest in stratification of the sample according to distance from the road (to examine whether the effects of road upgrades persist as one moves away from the road), we identified all vitongoji within each selected village (this was carried out by the listing team, which visited the selected villages ahead of the actual survey teams). Per village, the listing team divided the vitongoji in two groups depending on whether the distance from the kitongoji to the road is less than 30 minutes on foot (close stratum) or at least 30 minutes on foot (far stratum). We then randomly selected one kitongoji in each stratum. In this fashion, we arrived at a stratified sample of 200 communities (vitongoji), 100 in each stratum. For each road project, we distributed the villages and vitongoji evenly between the treatment and comparison roads (for instance, Tanga - Horohoro has 12 treatment villages and 12 comparison villages)

Questionnaires

Overview

Questionnaires 1. Household Survey: Household roster (education, literacy and potential illness of household members), Assets/Livestock, Housing materials, Public transport use, Economic activities 2. Community Profile: designed to collect information on characteristics that (are likely to) influence future socioeconomic trends and baseline information on outcome variables that are likely to be influenced by better roads 3. Ladder of Life Focus Group Discussion: designed to collect information on how a particular community defines welfare and to document the situation of the different participants on an ordinal welfare scale (the Ladder)

Data Collection

Data Collection Dates

Start	End	Cycle
2009-03-02	2009-05-18	N/A

Data Collection Notes

The Listing Team consisted of two Research Supervisors (RS), each of them working independently. Each RS was equipped with a PC for on-field data entry using CWEST programmes and an internet modem for instant data transmission. The duty of the listing team was to visit all sampled villages and carry out all necessary procedures before the arrival of the Survey Teams. There were two Survey Teams, each consisting of four Research Officers (RO) working under a Research Supervisor (hence, a total of 10 persons). Each RO had an Ultra Mobile Personal Computer (UMPC) for on-field data entry using CWEST programmes, and each RS had a PC and an internet modem for instant data transmission.The Listing Teams left EDI HQ on 20th February, 2009 and arrived in Tanga Region on February 22nd. Between 23rd February and 10th March, 2009 the Listing Team worked in the sampled villages in Tanga Region. The next days were spent on recording GPS coordinates. The Listing Team left Tanga (and headed for Sumbawanga) on 12th March 2009. The Survey Teams left Bukoba HQ on February 27th. They arrived in Tanga on 1st of March and interviewed the first two villages on March 2nd. By the end of March 15th, all sampled vitongoji in Tanga Region had been surveyed. The Survey Teams left Tanga on March 17th.The Listing Team arrived in Sumbawanga on March 13th and began listing the first villages the next day. The last villages were listed on March 31st. Listing Team headed for Mbeya on April 2nd. The Survey Teams arrived in Sumbawanga the 19th of March and started interviewing the day after. The last vitongoji were surveyed on April 1st. The Survey Teams headed to Mbeya on April 3rd.The Listing Team arrived in Mbeya on April 2nd and started working the same day. They finished all listing in Mbeya on April 16th and headed for Songea on April 19th. The Survey Teams arrived in Mbeya on April 3rd. After getting research clearance, they began surveying the first two villages on April 5th 2009. They completed work in Mbeya on April 21st. The survey teams headed to Songea in Ruvuma Region on April 23rd. The Listing Team arrived in Songea on on April 20th 2009 and listed the first two villages the same day. They terminated listing in Ruvuma on May 13th and headed back to EDI headquarters in Bukoba two days later.The survey teams arrived in Ruvuma Region on April 23rd 2009. After getting all necessary clearances from the Consultancy Services for the Design and Implementation of Household Survey and Community Profile for the Transport Sector 36 local authorities, they started surveying the first two villages on April 25th. The survey teams finished their work in Ruvuma on May 15th and headed back to Bukoba on May 18th.

Questionnaires

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Data Collectors

Name	Abbreviation	Affiliation
Economic Development Initiatives	EDI	

Supervision

Just like in Mainland Tanzania, the Listing Team consisted of two Research Supervisors (RS) working independently of each other. Each RS was equipped with a PC for on-field data entry using CWEST programmes and an internet modem for instant data transmission. The Listing Team visited the target Shehias/villages ahead of the Survey Teams. They left EDI HQ on 2nd June, 2009 and started work in Pemba Island on 5th June, 2009. The work of the Listing Team was different in the comparison than in the treatment Shehias: While the sample of treatment villages had already been established before the visit of the Listing team Consultancy Services for the Design and Implementation of Household Survey and Community Profile for the Transport Sector 97 (the Research Director, Survey Manager and a Consultant has sampled the treatment villages during an earlier visit to Pemba in November 2008), this was not the case for the comparison villages. Rather, the Research Director, Survey Manager and a Consultant had identified 14 appropriate comparison Shehias out of which 42

comparison villages had to be randomly selected. Hence, the first duty of the Listing Team was to visit to selected comparison Shehia, draw up exhaustive lists of villages within each Shehia and randomly sample three villages from the list. Once the villages were chosen, the Listing Team visited all 80 villages in the sample (42 comparison and 38 treatment villages). Within each village, they randomly sampled 20 households (15 'core' households and 5 replacements in case a selected household would refuse or be unable to participate) to participate in to be included in the household surveys. The team also organized for 5 knowledgeable persons in each village to participate in the Community Profiles. The Listing Team recorded all information electronically and sent it to HQ and to the Research Supervisors of the survey teams. The Listing Team finished all work in Pemba on August 2nd 2009. 6.2 SURVEY TEAMS There were 5 Survey Teams for Pemba, each consisting of 4 Research Officers working under the supervision of a Research Supervisor. Each Research Officer had an Ultra Mobile Personal Computer (UMPC) for on-field data entry using CWEST programmes, and each supervisor had a PC and internet modem for instant data transmission. Every evening, the Research Supervisors downloaded gathered data from the interviewers' UMPCs, checked the data and uploaded them on the EDI server. The Data Processing Team started processing the data as soon they had been uploaded. The Survey Teams left EDI HQ on June 17th 2009 and started conducting the first household interviews on June 27th. By August 10th, the Survey Teams had completed all 1200 household interviews in North Pemba. By August 21st they had also finished the Community Profiles.

Data Processing

No content available

Data Appraisal

No content available